3.0 BOUNDARY REFERENCES

Boundary reference data are used to remeasure plots and to compute the area for the condition classes sampled on a plot. Record all boundaries between condition classes that occur within the sampled (fixed-radius) area on subplots and microplots. Boundaries outside sampled (fixed-radius) areas are not referenced.

In addition to the recording procedures described herein, sketch maps of condition class boundaries onto the pre-printed plot diagrams on field tally sheets.

3.1 REFERENCE PROCEDURE

Reference, within the sampled area on each microplot and subplot, the approximate boundary of each condition class that differs from the condition class at a subplot center. Trees selected on these fixed-radius plots are assigned to the actual condition in which they lie regardless of the recorded approximate boundary.

Boundary referencing is done by recording azimuths and distances from subplot center to the reference points (Figures 7 and 8). Each boundary is marked by a maximum of three points - two where the boundary intersects the subplot circumference, and one "corner" point between the two end points, if necessary. Only the corner point requires a distance, since the distance from the center to the circumference is always equal to the fixed plot radius.

Microplot boundaries are referenced to the microplot center in the same manner described for subplots. Note that the larger the plot, the greater likelihood of a need for a boundary corner to record boundaries that are not straight lines.

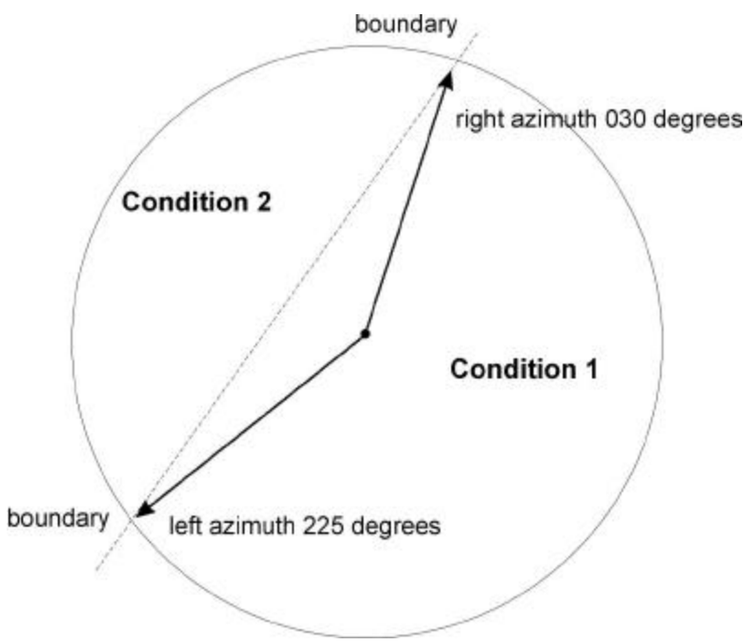

Figure 7. How to measure a straight boundary on a microplot or subplot.

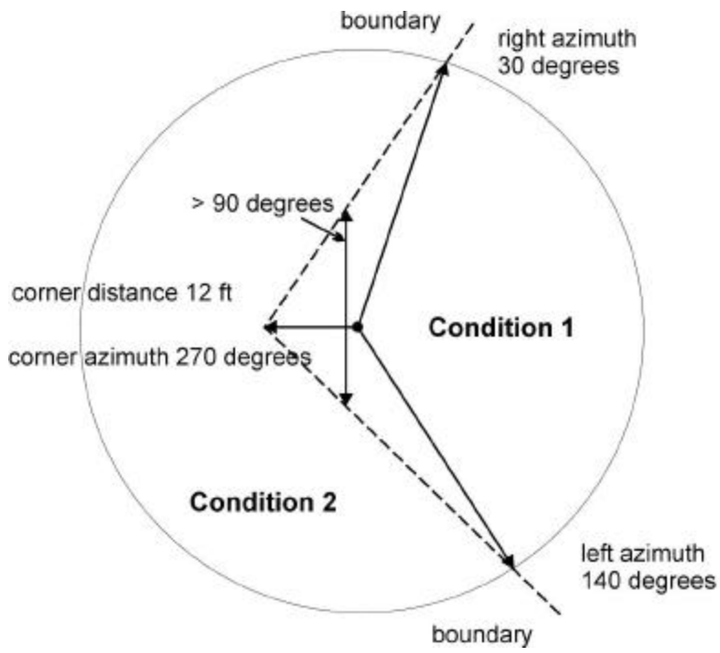

Figure 8. How to measure a boundary with a corner on a subplot.

Refer to Sections 2.1 and 2.3 for general mapping guidelines. The following additional rules apply when referencing a boundary within a subplot or microplot:

1. When a boundary between accessible forest land and nonforest land or between two contrasting accessible forest land condition classes is clearly marked, use that feature to define the boundary. Examples of clear demarcation are a fence line, plowed field edge, sharp ridge line, and water's edge along a stream course, ditch, or canal.

2. When a boundary between forest land and nonforest land is not clearly marked by an obvious feature, the boundary should follow the nonforest side of the stems of the trees at the forest edge.

3. When a boundary between two contrasting forest land condition classes is not clearly marked, map along the stems of the contrasting condition. When the boundary between two contrasting forest land condition classes is separated by a narrow linear inclusion (creek, fire line, narrow meadow, unimproved road), establish the boundary at the far edge, relative to subplot center, of the inclusion.

4. When a plot is remeasured, the crew will examine the boundaries referenced at last inventory. If no change has occurred, the current crew will retain the boundary data that were recorded at last inventory. If a boundary has changed, a new boundary is present, or the previous crew made an obvious error, then record new boundary data. Delete boundaries that are no longer distinct.

5. Although individual MQOs are specified for the azimuths and distances (see Appendix 6), in practice a crew will be considered 'correct' when the difference in areas as mapped by the original crew and by the QA crew is less than 10% of the subplot or microplot area.

3.2 BOUNDARY DATA

Record the appropriate values for each boundary mapped on the subplot or microplot as follows:

ITEM 3201 SUBPLOT NUMBER (CORE 3.2.1)

Record the code corresponding to the number of the subplot.

When collected: All boundaries
Field width: 1 digit
Values:

1	Center subplot
2	North subplot
3	Southeast subplot
4	Southwest subplot

ITEM 3202 PLOT TYPE (CORE 3.2.2)

Record the code to specify whether the boundary data are for a subplot or microplot.

When collected: All boundaries
Field width: 1 digit
Values:

1	Subplot boundary
2	Microplot boundary

ITEM 3203 BOUNDARY CHANGE (CORE 3.2.3)

Remeasurement (SAMPLE KIND = 2) locations only. Record the appropriate code to indicate the relationship between previously recorded and current boundary information.

When collected: SAMPLE KIND = 2, All boundaries
Field width: 1 digit
Values:

0	No change - boundary is the same as indicated on plot map by a previous crew.
1	New boundary, or boundary data has been changed to reflect an actual on-the-ground physical change resulting in a difference from the boundaries recorded.
2	Boundary has been changed to correct an obvious, gross error from previous crew, not a difference in opinion.
3	Boundary has been changed to reflect a change in variable definition (procedural change).

ITEM 3204 CONTRASTING CONDITION (CORE 3.2.4)

Record the CONDITION CLASS NUMBER of the condition class that contrasts with the condition class located at the subplot center (for boundaries on the subplot) or at the microplot center (for boundaries on the microplot), e.g., the condition class present on the other side of the boundary line.

When collected: All boundaries
Field width: 1 digit
Values: 1 to 9

ITEM 3205 LEFT AZIMUTH (CORE 3.2.5)

Record the azimuth from the subplot or microplot center to the farthest left point (facing the contrasting condition class) where the boundary intersects the subplot or microplot circumference.

When collected: All boundaries
Field width: 3 digits
Values: 001 to 360

ITEM 3206 CORNER AZIMUTH (CORE 3.2.6)

Record the azimuth from the subplot or microplot center to a corner or curve in a boundary. If a boundary is best described by a straight line between the two circumference points, then record 000 for CORNER AZIMUTH (000=none).

When collected: All boundaries
Field width: 3 digits
Values: 000 to 360

ITEM 3207 CORNER DISTANCE (CORE 3.2.7)

Record the horizontal distance, to the nearest 1 ft, from the subplot or microplot center to a boundary corner point.

When collected: All boundaries when CORNER AZIMUTH > 000
Field width: 2 digits
Values:

Microplot:	01	to	07
Subplot:	01	to	24

ITEM 3208 RIGHT AZIMUTH (CORE 3.2.8)

Record the azimuth from subplot or microplot center to the farthest right point (facing the contrasting condition) where the boundary intersects the subplot or microplot circumference.

When collected: All boundaries
Field width: 3 digits
Values: 001 to 360